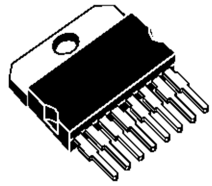
SGS-THOMSON MICROELECTRONICS

TDA7264

25 + 25W STEREO AMPLIFIER WITH MUTE/ST-BY

- WIDE SUPPLY VOLTAGE RANGE (UP TO 50V ABS MAX.)
- SPLIT SUPPLY
- HIGH OUTPUT POWER: 25 + 25W @ THD =10%, R_L = 8Ω, V_S = ±20V
- NO POP AT TURN-ON/OFF
- MUTE (POP FREE)
- STAND-BY FEATURE (LOW I_Q)
- FEW EXTERNAL COMPONENTS
- SHORT CIRCUIT PROTECTION
- THERMAL OVERLOAD PROTECTION

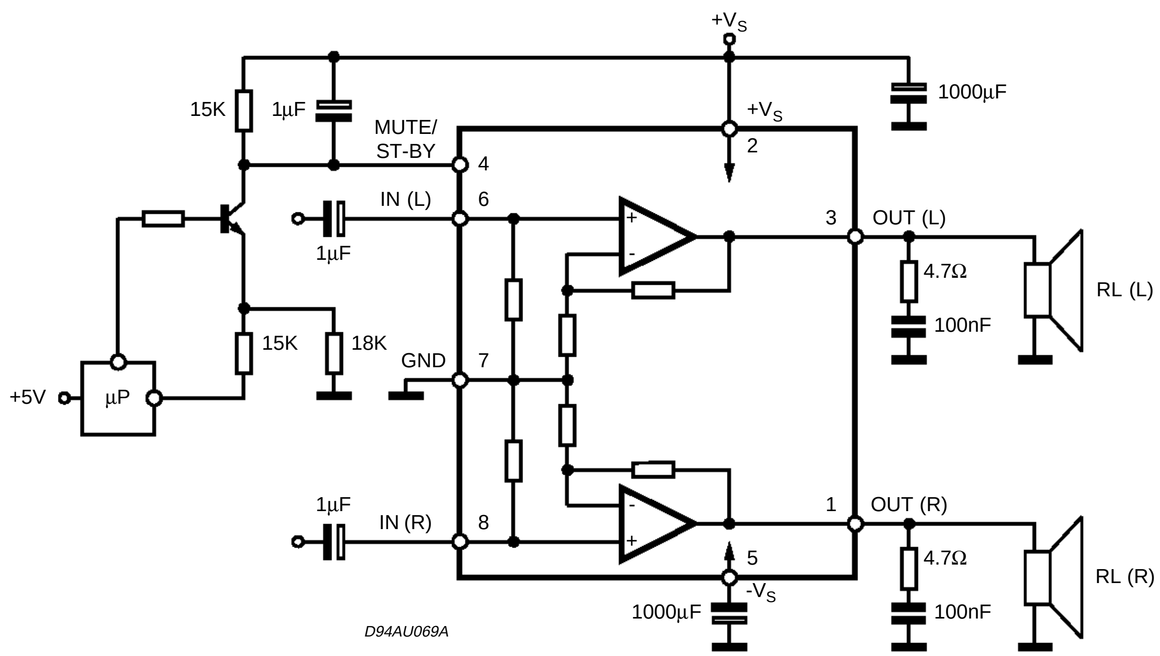


Multiwatt 8
ORDERING NUMBER: TDA7264

DESCRIPTION

The TDA7264 is class AB dual Audio power amplifier assembled in the Multiwatt package, specially designed for high quality sound application as Hi-Fi music centers and stereo TV sets.

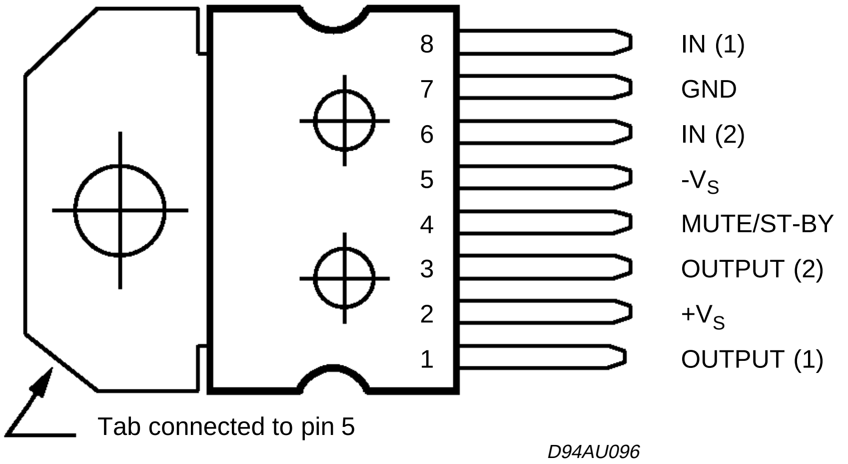
Figure 1: Typical Application Circuit



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	DC Supply Voltage	50	V
I_O	Output Peak Current (internally limited)	4.5	A
P_{tot}	Power Dissipation T_{case} = 70°C	30	W
T_{stg}, T_j	Storage and Junction Temperature	-40 to +150	°C

PIN CONNECTION (Top view)



THERMAL DATA

Symbol	Description		Value	Unit
$R_{th\ j\text{-}case}$	Thermal Resistance Junction-case	Max	2	°C/W

ELECTRICAL CHARACTERISTICS (Refer to the test circuit, $V_S \pm 20V$; $R_L = 8\Omega$; $R_s = 50\Omega$; f = 1KHz; $T_{amb} = 25°C$, unless otherwise specified.)

Symbol	Parameter	Test Condition	Min.	Typ.	Max.	Unit
V_S	Supply Range		±5		±22.5	V
I_q	Total Quiescent Current			80	130	mA
P_O	Music Output Power (*)	THD = 10%; $R_L = 8\Omega$; $V_S \pm 22.5V$		32		W
P_O	Output Power	THD = 10% $R_L = 8\Omega$; $V_S \pm 16V$; $R_L = 4\Omega$	20	25 25		W W
		THD = 1% $R_L = 8\Omega$; $V_S \pm 16V$; $R_L = 4\Omega$		20 20		W W
THD	Total Harmonic Distortion	$R_L = 8\Omega$; P_O = 1W; f = 1KHz		0.02		%
		$R_L = 8\Omega$; P_O = 0.1 to 15W; f = 100Hz to 15KHz			0.5	%
		$R_L = 4\Omega$; P_O = 1W; f = 1KHz		0.03		%
		$R_L = 4\Omega$; $V_S \pm 16V$; P_O = 0.1 to 12W; f = 100Hz to 15KHz			1	%
C_T	Cross Talk	f = 1KHz f = 10KHz		70 60		dB dB
SR	Slew Rate			10		V/µs
G_V	Closed Loop Voltage Gain		29	30	31	dB
ΔG_V	Voltage Gain Matching			0.2		dB
e_N	Total Input Noise	A Curve f = 20Hz to 22KHz		2.5 3.5	 8	µV µV
R_i	Input Resistance		15	20		KΩ
SVR	Supply Voltage Rejection (each channel)	fr = 100Hz; Vripple = $0.5V_{RMS}$		60		dB
T_j	Thermal Shut-down Junction Temperature			145		°C
MUTE FUNCTION [ref: +Vs]						
VT_{MUTE}	Mute / Play Threshold		-7	-6	-5	V
A_M	Mute Attenuation		60	90		dB
STAND-BY FUNCTION [ref: +Vs]						
VT_{ST-BY}	Stand-by / Mute Threshold		-3.5	-2.5	-1.5	V
A_{ST-BY}	Stand-by Attenuation			110		dB
$I_{q\ ST-BY}$	Quiescent Current @ Stand-by			3		mA

Note :
(*) FULL POWER up to. $V_S = \pm 22.5V$ with $R_L = 8\Omega$ and $V_S = \pm 16V$ with $R_L = 4\Omega$
MUSIC POWER is the maximal power which the amplifier is capable of producing across the rated load resistance (regardless of non linearity) 1 sec after the application of a sinusoidal input signal of frequency 1KHz.

APPLICATIONS SUGGESTION

(Demo Board Schematic)

The recommended values of the external components are those shown on the demo board schematic. Different values can be used: the following table can help the designer.

COMPONENTS	RECOMMENDED VALUE	PURPOSE	LARGER THAN RECOMMENDED VALUE	SMALLER THAN RECOMMENDED VALUE
R1	10KΩ	Mute Circuit	Increase of Dz Biasing Current	
R2	15KΩ	Mute Circuit	V_{pin} # 4 Shifted Downward	V_{pin} # 4 Shifted Upward
R3	18KΩ	Mute Circuit	V_{pin} # 4 Shifted Upward	V_{pin} # 4 Shifted Downward
R4	15KΩ	Mute Circuit	V_{pin} # 4 Shifted Upward	V_{pin} # 4 Shifted Downward
R5, R6	4.7Ω	Frequency Stability	Danger of Oscillations	Danger of Oscillations
C1, C2	1µF	Input DC Decoupling		Higher Low Frequency Cutoff
C3	1µF	St-By/Mute Time Constant	Larger On/Off Time	Smaller On/Off Time
C4, C6	1000µF	Supply Voltage Bypass		Danger of Oscillations
C5, C7	0.1µF	Supply Voltage Bypass		Danger of Oscillations
C8, C9	0.1µF	Frequency Stability		
Dz	5.1V	Mute Circuit		
Q1	BC107	Mute Circuit		

MUTE, STAND-BY TRUTH TABLE

SW1	SW2	
A	A	STAND-BY
A	B	STAND-BY
B	B	MUTE
B	A	PLAY

Figure 2: Demo Board Schematic

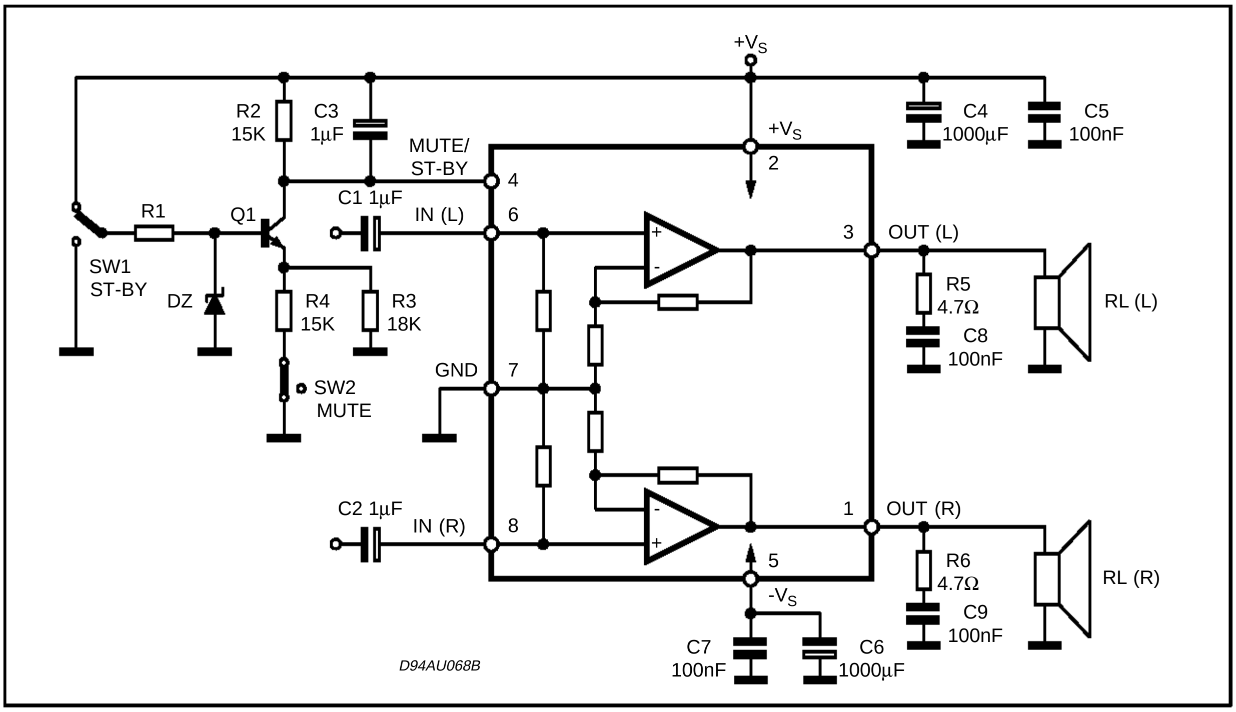


Figure 3: P.C. Board And Component Layout of the Demo Board Schematic (1:1 Scale)

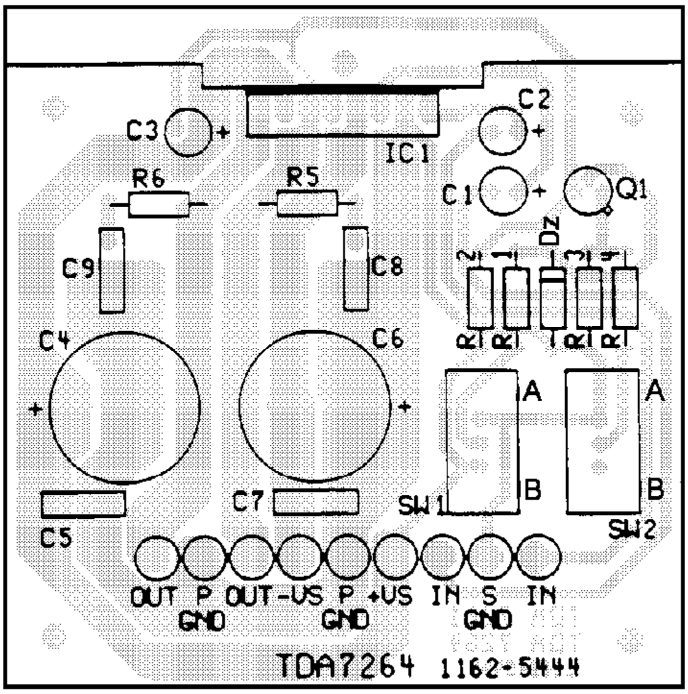


Figure 4: Quiescent Current vs. Supply Voltage

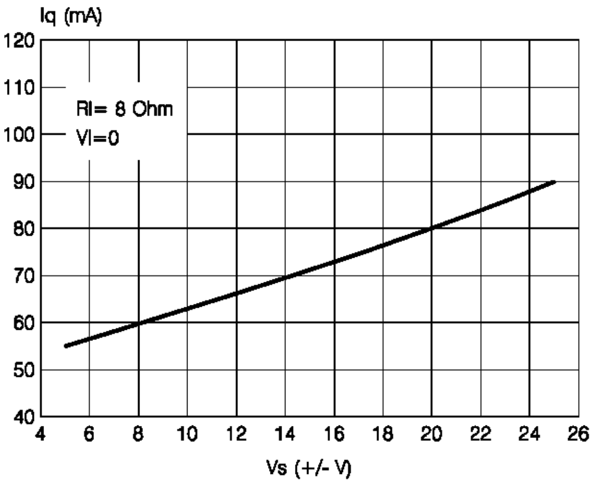


Figure 5: Frequency Response

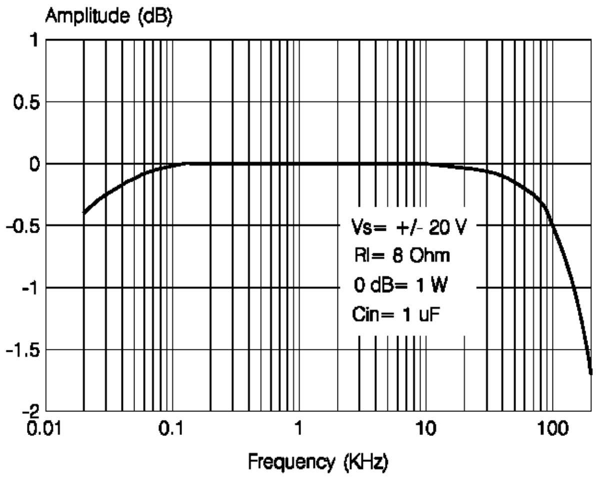


Figure 6: Output Power vs Supply Voltage

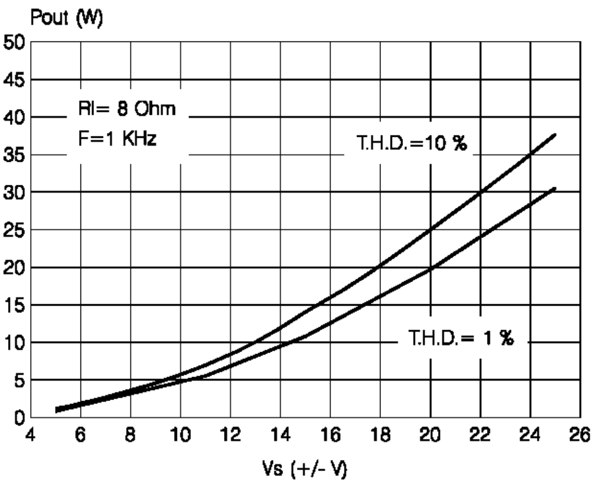


Figure 7: Distortion vs. Output Power

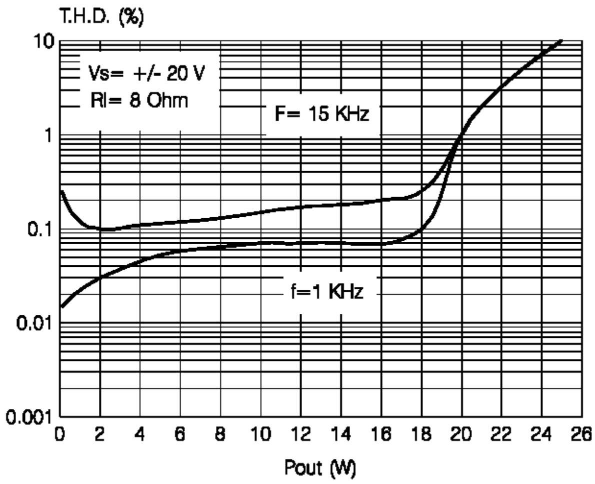


Figure 8: Crosstalk vs. Frequency

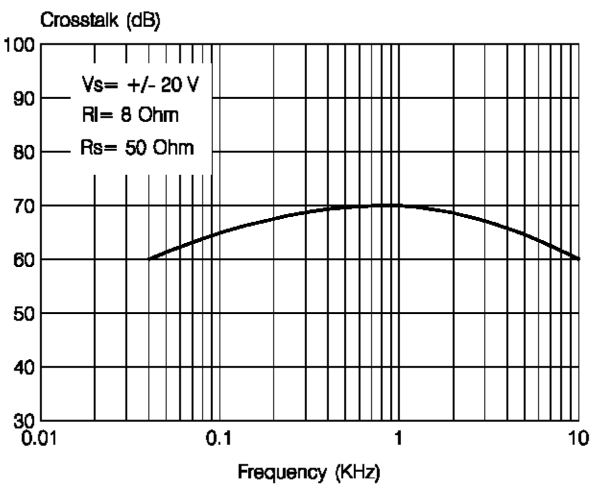


Figure 9: Supply Voltage Rejection vs. Fequency

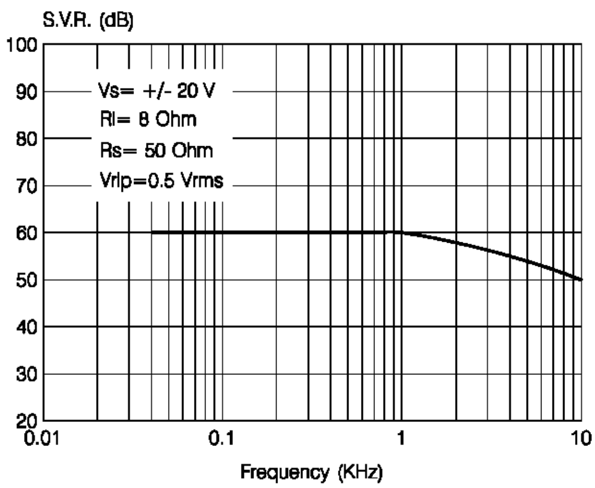


Figure 10: Attenuation & Total Quiescent Current vs. V_{pin4} Voltage

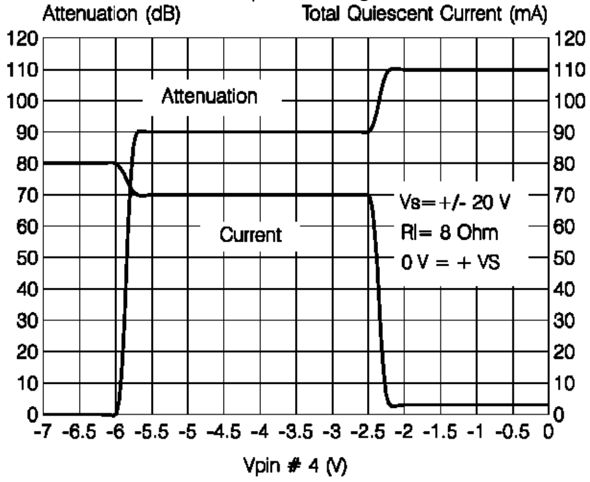
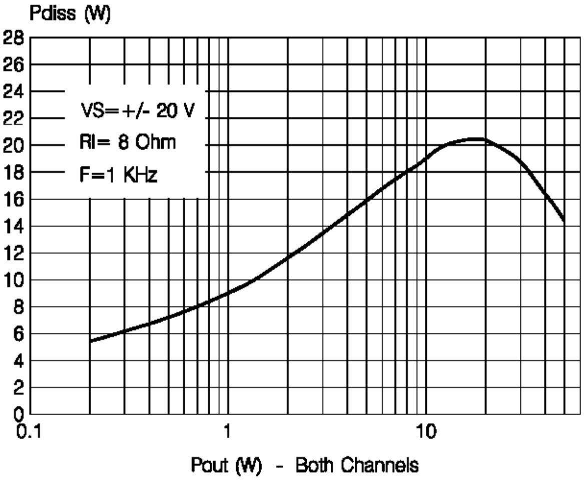


Figure 11: Power Dissipation vs. Output Power

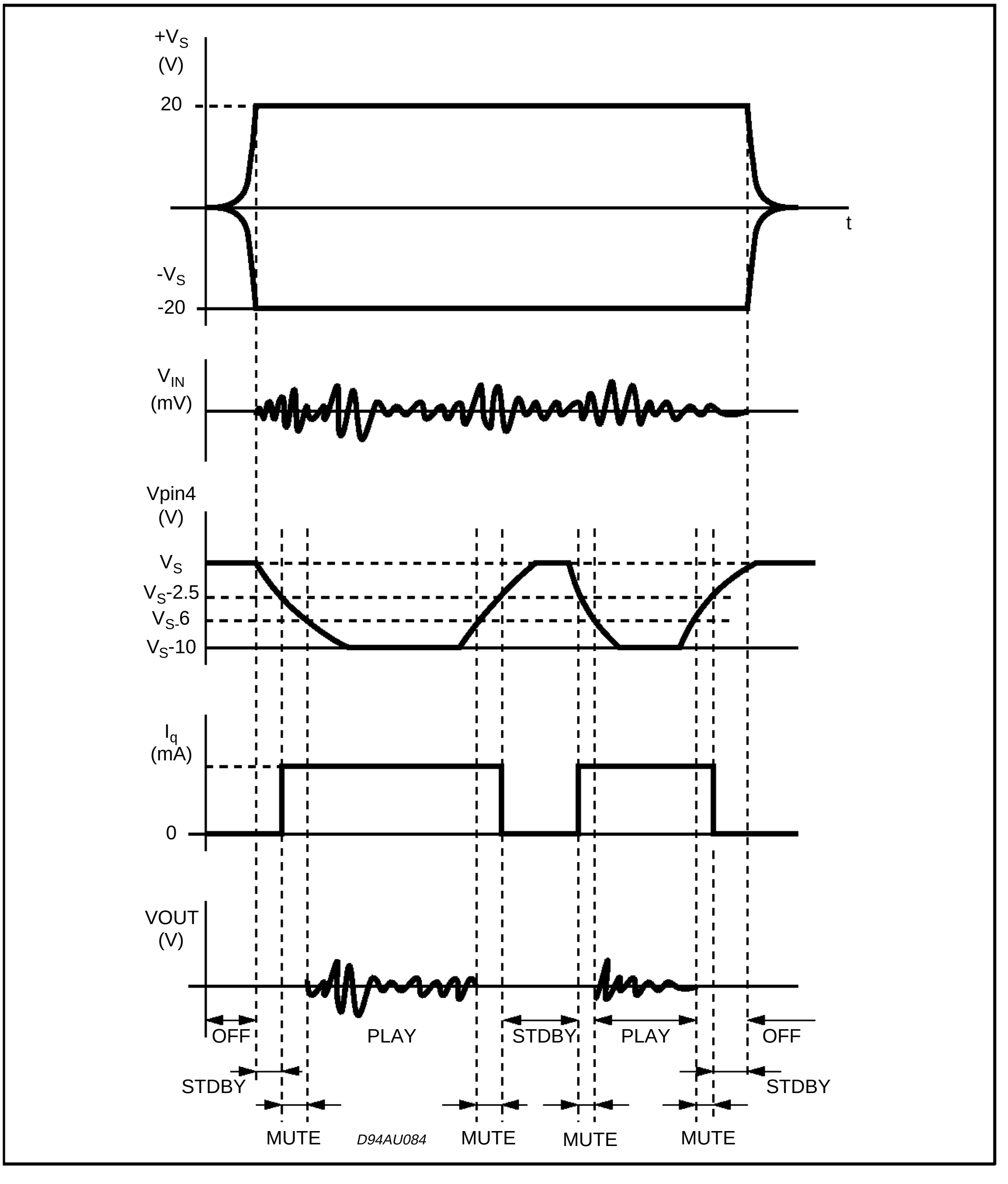


MUTE STAND-BY FUNCTION

The pin 4 (MUTE/STAND-BY) controls the amplifier status by two different thresholds, referred to $+V_S$.

- When V_{pin4} higher than = $+V_S$ - 2.5V the amplifier is in Stand-by mode and the final stage generators are off
- when V_{pin4} is between $+V_S$ - 2.5V and $+V_S$ - 6V the final stage current generators are switched on and the amplifier is in mute mode
- when V_{pin4} is lower than $+V_S$ - 6V the amplifier is play mode.

Figure 12



MULTIWATT8 PACKAGE MECHANICAL DATA

DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			5			0.197
B			2.65			0.104
C			1.6			0.063
E	0.49		0.55	0.019		0.022
F	0.78		0.85	0.030		0.033
F1	0.68		0.75	0.027		0.029
G	2.40	2.54	2.68	0.094	0.10	0.105
G1	17.64	17.78	17.92	0.69	0.70	0.71
H1	19.6			0.772		
H2			20.2			0.795
L	20.35		20.65	0.80		0.81
L1		15.7			0.62	
L2	17.05	17.20	17.35	0.67	0.68	0.68
L3	17.25	17.5	17.75	0.679	0.689	0.699
L4	10.3	10.7	10.9	0.406	0.421	0.429
L5	15.45		15.75	0.61		0.62
L7	2.65		2.9	0.104		0.114
S	1.9		2.6	0.075		0.102
S1	1.9		2.6	0.075		0.102
U	0.40		0.55	0.015		0.022
Z	0.70		0.85	0.028		0.034
Dia1	3.65		3.85	0.144		0.152

